

❧ WARMLEY ❧

Rural District Council.



ANNUAL..

REPORT



OF THE . . .

Medical Officer of Health

FOR THE

❧ YEAR 1902. ❧



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Warrmley Rural District Council.

ANNUAL REPORT,

1902,

OF THE MEDICAL OFFICER OF HEALTH.

GENTLEMEN,

I have much pleasure in presenting to you the Annual Report for the year 1902. I must tender you my best thanks for the support you have consistently given me in the performance of my duties. To the Surveyor will be left all that is to be said upon the working and structure of your Outfall Works at Moorend, for the treatment of the sewage of the Parish of Mangotsfield ; while your Inspector will append his report on the work of his department ; and, as he was appointed to the work in connection with Factories and Workshops, he will also give you details as to their condition and amendment.

The Tables are all the same as those of last year. As Mangotsfield Parish is, for the most part, distinctly more urban than the rest of the area, you will find separate figures for that parish. These may be interesting to the Parochial Committee ; besides, distinct mention will be made of the parish in connection with other subjects than that of statistics. During the year, separate reports were made at the monthly meetings of the Parochial Committee, upon matters more peculiarly interesting to that body, and recommendations were made to it regarding subjects of which that Committee ought to be the best judges.

The table of Rainfall I again owe to the Rev. S. Gillum, Vicar of Pucklechurch. It is a copy of one which he annually sends to the Meteorological Office.

The table of Urban Powers is again appended, supervised by your Clerk, and, so far as I know, it is complete. These powers put you practically in the position of an Urban District.

A recurring desire now and again becomes manifest, on the part of a section of the inhabitants of Mangotsfield, to have that part of your area made an urban area. There are certainly some advantages to be obtained by this measure, and the time must come when necessity will force the change. But, at present, the possession by you of nearly all the urban powers obtainable negatives the reasons for the change, while the additional expenditure of a separate establishment is by no means equalled by the further advantages to be obtained. That was the feeling of the last meeting called to discuss the matter. It seems that certain questions should be discussed and settled prior to any change being made, so that the financial position of the parish is more assured, and further improved, before proceeding to incur further expense. From the sanitary point of view, I fail to see any advantage.

During the year nothing has happened, either in your district or outside of it, to disturb the peaceful working of the laws you are called upon to administer. The only change made has been the appointment of your Inspector of Nuisances as Inspector of Factories and Workshops, under the new Factory Act of 1901, which came into operation in the beginning of 1902. The appointment was made in September, and the work, though in hand practically for the whole year, was only systematically undertaken from the date of the appointment. It is very obvious that a very great deal of work is in addition thrown on your hands, and that, in this district specially, the work will be very difficult to perform efficiently. An example will suffice, and it will show not only the inefficiency but the evanescent nature of the work to be done. For example: Your Inspector inspects and condemns a workshop, and requires improvements to be made. It is no uncommon thing in a week or two, on a second inspection, to find the family removed, without address left, and the premises occupied by someone employed in another business, not needing the workshop. I can now remember one place which was alternately workshop and pigeon-house twice within sixteen months. This is no solitary example of what obtains among the smaller workshops, and these are just the places requiring most supervision.

I have mentioned that the population of Mangotsfield is urban in character. That applies, however, only to Soundwell, Staple Hill and Downend, and to the Village of Mangotsfield; the rest of the parish is quite rural. Soundwell is continuous with Kingswood urban area on the south, and with Staple Hill on the north. The greater part of the Mangotsfield ward of Kingswood was taken from Mangotsfield. Staple Hill is also continuous with Bristol on the west, and Downend on the north. The Parish of Siston, though

largely rural, contains towards Kingswood a semi-urban area at Warmley ; also continuous with Kingswood. Oldland Parish has a semi-urban area at Warmley Batch and Cadbury Heath, and another along Park Wall to Longwell's Green, where it joins the Parish of Hanham Abbots ; the latter parish has also a semi-urban area contiguous with Kingswood. Bitton is chiefly rural, though there are thickly-populated portions along North Common and Oldland Common, and at the Village of Bitton.

GEOLOGY.—The geological formation may be here noticed. According to *Lyall*, the upper and lower coal measures in the Bristol coal-fields are divided by the pennant ("a micaceous flaggy sandstone"). Parts of the Parishes of Mangotsfield, Bitton, Oldland, and Hanham Abbots lie on the upper coal measures. The dividing pennant crops out here and there very frequently, and is quarried for many purposes, such as building-stone, monumental-stone, &c. Overlying the pennant in Soundwell, Siston Common, and Staple Hill, is a thick bed of clay, which is used for brick and tile making. Towards Siston Common and Siston Hill a thin bed of soft shale crops to the surface, but the upper part of Siston Parish, with the rural part of Bitton Parish and the Village of Bitton, lie on the lower lias. The slopes of Golden Valley show an outcrop of new red, with a tongue of lias around the coal there. Another small portion of new red crops out at Mangotsfield Station.

The general conformation of the surface is undulating. There is a considerable rise from the Avon, which bounds your area on the south, to the slopes of the Lansdown Hills, and again from the Frome and Folly Brook, which constitutes your boundaries on the north, to the top of Hopewell Hill, near Kingswood, on the south.

Two small streams run through the district. The Siston Brook forms the boundary on the Kingswood side, as far as Warmley, after which it runs through your district till it joins the Avon at Londonderry. The River Boyd rises in the high grounds round Pucklechurch, Westerleigh, Wick, and Bitton, and flows through Golden Valley, also to join the Avon. The urban districts of Bristol and Kingswood close you in on the south and west, while to the north and east lie the rural districts of Barton Regis, Chipping Sodbury, and Keynsham. The whole area, except where the clay comes to the surface, is covered by a pervious or rocky soil, is easily drained, and possess, as at Frenchay and Bitton, spots of great beauty.

The inhabitants of your area consist of the lower middle, but chiefly of the working-class. As in every working-class area, there is a goodly number who class themselves as working-men, but who never do any constant work. The staple industries are coal-mining and shoe-making. All the coal-pits, save one, now employing these miners are in surrounding areas. There are five or six fairly large shoe factories in your district, but most of the shoemakers find employment at the factories of Kingswood and Bristol ; a large proportion of them do their work at home, in the kitchen, back-

kitchen, or a small workshop built behind the house. Your Inspector, so far as he has been able to get over them, will tell you of their condition ; but I may say that, generally speaking, they are by no means models of sanitation. They are, not infrequently, overcrowded, badly ventilated, badly lighted, with roof too low, and floor neither clean nor dry ; and a great many are not kept so clean as they might be. Moreover, the shoemakers, as a class, are by no means so clean as the miners. The coal-miners work in well-ventilated mines, and comparatively few accidents occur amongst them. I do not think phthisis, or other respiratory disease, occurs more frequently among them than among others of the community. Emphysema occurs among the branchers, but that is due to their entering the heading before the smoke of a shot has cleared away.

The factories in your district are well-built, well-ventilated, well-lighted, and well-conducted. The sanitary appliances are for the most part adequate, and, with two exceptions, the egress in case of fire is fairly good. The workers in these factories have average health.

Besides the boot factories, there is a large paper mill at Bitton, employing many hands ; a stay factory on Oldland Common, which I have always pointed out as a model for others ; and a clothing factory on Staple Hill, which is not far behind. Brick and tile making is carried on at Warmley, and at Shortwood, just outside your area, where many from your district are employed. Quarrying of pennant stone employs a goodly number of men, and lime-burning employs others. Market-gardening is becoming every year a larger industry, owing to the proximity of the City of Bristol.

Many men are employed in different industries in Bristol, such as cocoa and chocolate making, tobacco manufacturing, &c. Others, again, are employed in agricultural pursuits, such as dairy farming and grain growing.

The women are employed in paper-making, light shoe-making, boot-closing, stay-making, and tailoring. The last four mentioned are chiefly conducted at home, and generally in the kitchen. Except amongst the shoemakers, the kitchens are very fairly clean, but I find the air overheated and giving off foul smells. These workshops are not constructed properly, as they are mostly constructed primarily as kitchens. Many of these houses are cottages, so that when a case of infectious disease occurs in one of them, no isolation is possible, the work is stopped, and the inmates in a week or two thrown on the parish. Worse, however, than that happens. There is a great inducement to hide cases of mild epidemic disease, I have often found this to be the case, associated with a strong assumption of ignorance difficult to deal with. It leads to a constant spread of epidemic disease to us from Kingswood and Bristol, and *vice versa*.

When we obtain our New Hospital, first cases of infectious diseases can be dealt with by isolation, and disinfection of premises and clothes. The spread of these diseases will be curtailed, and

the necessity for isolation at home, which is always most unsatisfactory in cottage property, will be obviated.

Beyond possessing the means of isolating a case of infectious disease, which is not a function of a cottage home, the house accommodation for the working-classes in the district is fairly good. The houses are of fair size—many possessing three or four rooms, well-lighted, well-ventilated, and fairly dry and clean. There are a few, but only a few, back-to-back houses ; space surrounding the houses is ample. Building bye-laws are in action for the whole area, they are well carried out and apparently sufficient for the purpose for which they were passed.

I have reported during the year only four cases of overcrowding, which were remedied immediately upon notice being served. In an area so near to a large town, we often find temporary cases of overcrowding, but, when they are found out, they soon move further afield to the open country, where the effect is less marked and less noticed. The greatest trouble is given in this respect by companies of gipsies who locate themselves in our midst for the winter months. They are generally managed by causing them to abate the nuisances they create, rather than by summoning them for overcrowding. There have also occurred several cases of very large families occupying premises, large enough from the prescribed but not from the sanitary point of view ; far less from the moral point of view. However, these cases are few in a population such as yours is. In all instances brought before your notice, the cases have been remedied as they occur.

SEWERAGE AND DRAINAGE.—In the Parish of Mangotsfield there has been for some years a system of sewers and drains, which, according to your Surveyor, works fairly well. These lead to the outfall works at Moorend, within your area ; whence the sewage flows to a small brook and finally to the River Frome. During the year, the transition from the international system to the bacterial system, which I mentioned in my last report, has been continued, till now the whole of the sewage is treated by the latter system. The treatment consists first of straining the sewage through a large grid, whence it passes into large, deep, airless, dark tanks, and overflows by various channels on to beds consisting of clinkers. It then passes through land-filters, occasionally varied in extent, to the final effluent, whence it flows to the Frome, as before-said. Analyses have been made from time to time by Mr. Waterfall, Analytical Chemist, the results of which are given in your Surveyor's report. During the transition, complaints have been made by the Barton Regis Authority, of nuisance created by smells, but it is hoped these will not occur again. So far as the report goes, the new system bids fair to do well ; your Surveyor's report will give the details of the exact position in which we now stand. In December I visited these works with him, and found the conditions in general very good, with the one exception, that more cleanliness might be obtained ; but in a state of transition that may be excusable.

As in all recently laid sewers, faults are often discovered, but they are remedied as they are found out. The one chief fault I have to find is the enormous number of hand-flushed water-closets. It is said, and possibly with some truth, that the expense of draining cottage property is out of proportion to its value, and that the addition of a flushing-tank would make matters more expensive. But, on the other hand, it is amongst the inhabitants of cottage property that irregularity of hand-flushing most frequently occurs. When you take into account the large proportion of cottage property existing in the parish, you can perceive the condition of your sewers, and of your sewage on arrival at the outfall works. I have mentioned this matter in previous annual reports, and on other occasions.

In this parish a few cesspools still exist, and a few privies ; these, however, are chiefly in places where the sewers are inaccessible.

In the rest of your area, comprising the four Parishes of Siston, Oldland, Bitton, and Hanham Abbots, there is no system of sewerage. In my opinion, these parishes are not ripe for it yet. There are a few parts more populous than the rest, *e.g.*, Warmley, Cadbury Heath, Longwell's Green, portions of North Common and of Oldland Common, and Bitton Village ; but, as yet, there is no collection of houses large enough to warrant the expense of a system of sewerage. For the most part, the gardens are large enough to utilize the sewage, and this would be more pronounced if the plan of using dry-earth closets were more frequent.

Well-constructed cesspools, and properly ventilated, are not common ; they usually leak, I am afraid intentionally ; they are frequently unwalled and unventilated, and thereby pollute the underground water and springs. The drains are better than they were, but untrapped ones are by no means unknown. These strictures apply to the older cottage properties principally, where also is found the old privy in the garden, not often removed far enough from the dwelling. The amelioration of this state of things in a rural area requires a long period of time, nor is it so urgent as in an urban area ; the worst of it is the contraction of other dirty habits which this condition engenders. A great deal has been done during the year to improve matters ; *e.g.*, the Longwell's Green nuisance ; but a great many cottages still drain directly or indirectly into your streams, cases of which have been from time to time reported.

The temporary treatment of the sewage, passing from Kingswood by Fisher Lane, has somewhat improved its condition, but there is still room for much improvement.

I must again advert to the use of earth closets. A general use of them would be much better than the common plan of either privy, or mixing excrement with slop water and other ordure in a cesspool.

SCAVENGING.—A contract has been entered into by Mangotsfield to have its house refuse removed twice a week. This has been carried out since August last. The action is certainly in the right direction, for it had become almost impossible for many households to dispose of their refuse, except at considerable expense. In the remainder of the district it is chiefly disposed of on the gardens.

I have frequently drawn your attention to the objectionable methods used by the Kingswood and Oldland School Board of emptying the cesspool at Cadbury Heath School. I am not aware of any improvement there, though rectification is a simple matter.

LIGHTING.—A good deal of energy has been expended in Mangotsfield in the discussion of the lighting question. There is no difference of opinion about the necessity of lighting, but there is great variety about the extent and the method of accomplishing it; a parish meeting has been again called for its discussion, and it is to be hoped that something definite will be evolved. (Since writing the above, the parish meeting has been held and declared against lighting at present).

WATER SUPPLY.—The West Gloucestershire Water Company is still the chief distributor of water over the district, its mains are laid over nearly the whole area, with the exception of purely rural portions, whose supply is still maintained by wells to each house. These wells in the country give a fairly good and pure supply, but they are mostly surface wells and require constant attention; many of them are built of dry, stone walls, and the water is lifted by a pump or by hand. Where evidence of pollution through the soil can be found, they are closed and another supply obtained, as at Over Court Farm. Where the pollution is from the surface, proper covering and other improvements have been ordered. In other cases the water has been insufficient, as at Dibdin Farm and at Barton Farm. The supply to the former of these farms has been under discussion, along with the supply to Blackhorse, for some time, but I am not aware of any definite action having been taken to improve it. The supply to the latter farm was promised to be improved, by the proprietor, some 12 or 18 months ago, but I am not aware of any improvement there. The supply to Viney Green is improved, but the mains require to be laid to the rest of the houses. The houses at Pomphrey require a supply, as well as those at Moorend. Your own cottage, at the outfall works, is still without a proper supply. I am glad to state that you have given the guarantee, for the North Common supply, to the Company which has laid its mains there. I examined several samples of water there, and condemned three; I am not aware of any closure order being obtained for these three wells. I know also, as I have before-stated, that much of the water used there may become at any time dangerous. The supply at Webb's Heath is still very insufficient.

The supply by the West Gloucestershire Water Company has been both sufficient and of good quality. I have examined it at intervals of three months, and I find its quality very constant, and quite up to the standard as given to Parliament. The pumping

power is equal to 1,000,000 gallons daily. The supply is got from an old disused iron mine at Coalpit Heath, which is sunk, I believe, in the pennant—a very watery stratum. The gathering ground is a very large area, embracing the southern slopes of the Cotswolds, but, as it has to pass through strata of varied nature containing lime, the water is hard. The hardness is lessened by aeration and other mechanical means. The number of new connections to this supply, during the year, is as follows :—

Bitton	Hanham Abbots	Mangotsfield	Oldland	Siston	Total
12	—	70	8	6	96

I have examined 15 samples of water, condemned 9—in which the wells were closed, considered 3 doubtful—for which Company's water were substituted, and 3 were fairly good.

LODGING HOUSES.—I am not aware of the existence of any in your area.

SLAUGHTER HOUSES.—There are about 12 or 13 of these, and some other places where pigs are killed from time to time. The slaughter houses are not model structures, but they mostly satisfy the conditions specified in the bye laws. One slaughter house I had to complain of, but that has been discontinued of late, so far as I can discover. I have reason to suspect certain places of using inferior carcasses, but as yet I have no proof; the means at my disposal of keeping a proper watch is insufficient.

DAIRIES, COWSHEDS, AND MILK SHOPS.—The Order concerning these has been in operation since about 1887, but I can obtain no evidence of its enforcement till ten years later. A register was then made out and has been kept ever since. Fairly constant visitation of them has been carried out. The drains are in good condition, but three have a bad or insufficient water supply. The cowsheds, especially the smaller ones, are anything but good, for many have no proper structure; and ventilation, lighting, and cleanliness are all deficient, but these matter less in the country, though highly desirable. The larger cowsheds are all in good condition. The milk shops are almost all small, and connected with other businesses. The milk is therefore kept in the open shop amongst other merchandise, such as groceries, fish, vegetables, &c. This is not a desirable mode of keeping milk, but the quantity is so small that it may almost be lost sight of. The great supply of the neighbourhood is direct from the dairyman to the consumer.

BAKEHOUSES.—There are 15 regular bakehouses in the district belonging to people who conduct no other business, and these have all been inspected, improvements suggested and carried out, so that they are fairly good examples of such factories, as most of them

are. But alongside of them there are many so-called bakeries, consisting of small ovens and small places to bake in, which are cleanly enough but have none of the conveniences to conduct their baking on sanitary principles ; and further, the surroundings of these small bakeries are often very insanitary ; for example, water-closets, cess-pits and drains are in too close proximity to the bakehouses. Many of these defects have been remedied, and in others the baking stopped. I cannot conceive it possible to be too particular about the making of the bread we eat, though enforcing proper sanitary conditions may fall hard on the individual.

FACTORIES AND WORKSHOPS.—I have already alluded to these and expressed the knowledge we have of them in a general way. I have also given the reason why specific knowledge is as yet unavailable. Though the whole matter is in hand, and a large amount of work done, information is not yet formulated in records, and therefore not available for a satisfactory statement of facts. A short statement is made in the Inspector's report, which, next year, will contain a mass of specific information.

NUISANCES.—These are referred to in your Inspector's report, which supplies information as to the work done and to be done.

INFECTIOUS DISEASES.—The Notification Act of 1889, and the Prevention Act of 1890, have been in force here almost since their passing, and, for the last ten years, have been worked vigorously in so far as our appliances allow. Till March last, we had a share in the Infectious Diseases' Hospital at Keynsham, which was erected when the two districts of Warmley and Keynsham were one. In March our interest in that hospital lapsed, by notice given, since which time we have had no hospital. I have always maintained that, though that hospital was central for the combined district, it was quite out of reach of the big mass of the population in our district, and that our natural ally in hospital matters was Kingswood, a parish in the Out-relief Union of Warmley, though a separate urban district. During the last year an approachment with Kingswood has been made, and a good deal of friendly intercourse has taken place on having a conjoint Infectious Diseases' Hospital. It seems likely, I think, that a conjoint hospital will be agreed upon.

In this connection I may say that an ambulance, disinfecting apparatus, and conveyance for infected goods are all contemplated.

Meanwhile, there is no provision for smallpox or plague cases, these I mention specially. I have, however, recommended the adoption of antitoxin treatment for diphtheria, to be used at the Council's expense, and also the use of the means of diagnosis of diphtheria and typhoid fever. Resolutions on these matters have been made and passed.

The details of managing cases of infectious diseases I will now mention. Up till March last there was an Isolation Hospital at

Keynsham, of twelve beds, over which we had control of only six, governed by a conjoint committee of the two authorities. It was not kept up as a permanent establishment. These six beds were all we had for a population of 16,000, and this population is contiguous and in close communication with the large manufacturing area of Bristol, and its ports. Our constant exposure needs a permanent establishment. As Kingswood is as much, if not more, exposed than we are, and is almost surrounded by the Warmley area, it has always been my contention that that urban district is our natural ally in hospital matters. The result of the previous arrangement was well exemplified in the trouble and expense incurred in the isolation of two cases of scarlet fever. In both instances the establishment of the hospital had to be created, and the expenses amounted to nearly £100; the benefits accruing were not equal to this. A hospital of our own, with a constant establishment, enables us to isolate first cases, and to prevent the spread of infectious disease, which is one of the functions of a sanitary authority; besides, treatment is more effectual than at home in a cottage, lives are saved, and the work of the homes carried on. Money is also saved to the Union, so that what is spent by the Council as the Sanitary Authority is recouped to the Council as the Poor Law Authority. Both then, on the higher as well as on the lower grounds, an efficient Infectious Disease Hospital is desirable and imperative. A sufficient number of beds, say 25 at least, for the two Authorities, a constant establishment, and necessary adjuncts of disinfectant, ambulance, and covered conveyance for carrying infected goods, are all needed.

Disinfection has hitherto been carried out at the homes by means of sulphur dioxide, and thorough washing out afterwards. The clothes have been immersed in solution of carbolic acid for some hours, then boiled and washed.

INFECTIOUS DISEASES.—Notifications have again risen to 147, as against 102 last year. The chief increase has been in scarlet fever, 40 cases more. There has also been an increase in diphtheria. There has not been, at any time, anything like an epidemic of either disease. Only five of the notifiable diseases are mentioned in the certificates, viz. : scarlet fever, diphtheria and membranous croup, erysipelas, enteric fever, and puerperal fever. Of these you will notice that 96 are cases of scarlet fever, leaving 51 for the other four diseases. Now I conceive it quite possible to stamp out scarlet fever, if a crusade all over the county were made against it. It is quite true that for some years the type has been much milder, and for that reason it is difficult to get up a *furor* against it; but if these 96 cases could be blotted out of your record, the 51 remaining cases would constitute a remarkable number of infectious diseases in such a district as this. Time has been in the past when scarlet fever was non-existent in your area, but I am afraid that will not occur again until the surrounding areas aid you in the campaign against it. I append the usual table of time incidences of these diseases by months.

	Scarlatina	Diphtheria	Erysipelas	Enteric	Puerperal	Total
January ...	9	1	1	...	...	11
February	10	...	2	...	1	13
March ...	13	2	...	...	...	15
April ...	7	3	2	...	...	12
May ...	9	3	3	2	...	17
June ...	5	...	...	1	...	6
July ...	4	2	2	...	...	8
August ...	4	3	1	...	...	8
September	8	3	1	...	...	12
October ...	11	5	2	1	1	20
November	11	...	5	1	...	17
December	5	...	...	3	...	8
Total ...	96	22	19	8	2	147

SMALLPOX.—There have been no cases. With regard to our first line of defence against this disease, viz., vaccination ; it is to be hoped that that measure will be more efficiently carried out in the future than in the past. Our second line of defence, viz., a hospital for isolation, is non-existent. *Our first line is defective, and our second non-existent.* It must always be remembered that a certificate of conscientious objection is not a defence against the disease ; a certificate will not prevent a child having smallpox, will not prevent its greater liability to the disease, and, further, will not prevent its greater liability to succumbing to the disease. Smallpox has no respect for certificates of exemption. Inefficient vaccination is better for a time than none : under that impression I vaccinated inefficiently, but widely. But efficient vaccination is best of all, and that I promote, and do. The area, however, will be smaller until prosecutions are undertaken. I wish, in this connection, to leave a very distinct impression, that in my own experience vaccination is a protection against smallpox, almost, if not equal to, an attack of smallpox itself. In five epidemics of smallpox, in which I attended the patients, I was always vaccinated and never had smallpox. In three of these instances a nurse refused to be vaccinated, took smallpox and, in two instances died ; the other nurses were all vaccinated, and not one took smallpox. In numerous families where smallpox arose, the other members of the family were vaccinated, and none took smallpox. In many others, where one or two escaped vaccination, these invariably took smallpox, and some died. The Gloucester epidemic gave numerous examples of all such cases. For these statements I can give you the instances which are on record, and, in my own opinion, I feel bound to give you these facts, which I can prove by instances innumerable ; and I have to add that the general experience of medical men in this country coincides. In other countries of Europe, the overwhelming evidence has led to legislation of a very stringent character, with the result that smallpox scarcely exists. This is my *pronunciamento* on the matter.

SCARLATINA.—I referred to this disease in my general remarks. No doubt the disease has been of a very mild type through the whole year. The great increase in notification—from 57 to 96—is no doubt due to an increase of cases, but is also due to better recognition and more care by parents. I have seen very many mild cases which a year or two ago would have been overlooked and left unnotified. I find isolation at home in this disease specially unsatisfactory, partly due to the time required becoming irksome to parents and children, and partly to the apparent well-being of the children; parents can see no danger either to patients or others. Out of the 96 notified 3 died, giving a case mortality of 3·1 and a death rate of ·18. You will also notice that the disease has been amongst us the whole year. The chief places of incidence have been Staple Hill, Soundwell, Oldland Common, North Common, and Cadbury Heath. Sixty-five of these cases were notified in Mangotsfield, leaving 35 for the rest of the area.

DIPHTHERIA AND MEMBRANOUS CROUP.—Twenty-two cases were notified and 10 deaths occurred, giving a case mortality of 45 and a death rate of ·6—this is very high. It is to be hoped that now you have granted the free use of antitoxin in treatment, it will be used more generally and the mortality lessened. In eight of the twelve months cases have been notified, and pretty generally over all the area. There was no threatening of an epidemic, and, except in one instance, no new cases arose from the old ones; most of the cases arose from communication with Bristol and Kingswood. In Mangotsfield 12 cases were notified and 5 died.

Last year there were 14 cases notified and 3 died, over the whole area.

ERYSIPELAS.—Nineteen cases were notified and no death occurred.

ENTERIC FEVER.—Eight cases were notified, two of these being in Mangotsfield; one death occurred in Mangotsfield. Most of the cases arose on the borders of Kingswood. In three of the cases the water used was found to be contaminated by sewage, in two others the water was not good, and in the other three cases no cause was discovered. No new case arose from any of them.

MEASLES.—This disease occurred during the year in a sporadic form, but towards the end of September it assumed epidemic dimensions in Downend and Staple Hill. On the 6th October I advised the closing of the infant department of Downend National School, for a fortnight or until further notice; the school was, in fact, closed for three weeks, and a great diminution of the incidence of measles occurred. About the same time there was an epidemic form of the disease in North Common and Oldland Common, affecting the attendance of children at Oldland Common Board School; I closed the infant department there for a fortnight and the condition of things was improved. But the epidemic spread down the Common and affected the attendance of the Oldland National School so much that I thought it advisable to close the

whole school ; this took place for a fortnight, and the epidemic has since then diminished. The disease was fairly severe, and was followed by the usual *sequelæ* which caused three deaths.

EPIDEMIC INFLUENZA.—One death is attributed to this disease. It never assumed epidemic proportions.

DIARRHŒA AND DYSENTERY.—Epidemic diarrhœa caused two deaths and enteritis ten, but, I am afraid, some of the latter should be classed with the former, though I have no authority for doing so ; in any case there was not the same prevalence of the disease as in former years.

PHTHISIS AND TUBERCULOSIS.—Twenty-two deaths occurred under these two headings as against 17 last year, giving a rate of 1·3. Tubercle bacilli are still prevalent. They obtain access to the body by air and food, and, if the ground is favourable for their development, they grow and cause tuberculosis. There is no doubt that certain people form a more favourable ground for their development than others, but these can be made less vulnerable by a life in good open air and sunshine. These two conditions are inimical to the growth of tubercle bacilli ; good and regular feeding are necessary for the purpose of maintaining the strength. The treatment can be managed at home, but hospital discipline must be maintained ; it is this latter element to which sanatorium treatment owes its success. But, when the public understand that this discipline is a most urgent essential, it will be submitted to gladly, and the great use of a sanatorium will be the education of the patients.

MUMPS AND CHICKEN-POX have both prevailed, the former at Mangotsfield, and the latter at Soundwell and Staple Hill. Ringworm and Scabies have died out since last year.

WHOOPING COUGH has led to no deaths this year, but it has prevailed in one district or another, more or less, during the whole year. It was so violent in Siston that I advised the lengthening of the Easter holiday by a week. This school is a purely rural one, and the holiday had a good effect in checking the spread of this disease.

SALE OF FOOD AND DRUGS ACT.—Although your Inspector has been appointed, I am not aware of any action that has been taken. I do not suppose that our food and drugs are above suspicion, and an occasional examination would at least tend to keep up the standard.

Vital Statistics.—

Acreage, 9,682 acres	} estimated.
Population, 1891, 13,539	
„ 1901, 15,954 (census).	
„ 1902, 16,510 (middle of year).	

It is probable that the estimate of population is rather high. The estimate is based on the last decennial increase, but factors

were then at work which are now not quite so active ; these factors were the opening of a railway station at Staple Hill, and the introduction of electric tramcars into the district. A great amount of immigration took place for some time, but the want of public lighting will have a deterrent effect on this mode of increase.

BIRTHS.—The total number of births was 496 ; of these 264 were males and 232 females. The birth rate for the year was 30·04, an increase of 1·31 on last year. The males still predominate, but not so much as last year.

DEATHS.—The gross number of deaths was 215, as given in the Registrar's weekly returns, to this must be added 12, who died in Keynsham Workhouse, belonging to the district, making in all 227. The death rate for the year was, therefore, 13·74 ; this was slightly lower than last year. The natural increase of population, *i.e.*, the excess of births over deaths, was 269.

INFANT MORTALITY.—There were 64 deaths of children under one year of age, the same number as last year ; the infant mortality figure is therefore 129·03. There was no special disease to account for this mortality. The premature births were 14.

ZYMOTIC DEATH RATE.—Twenty deaths occurred from these diseases and may be arranged as follows : measles, 3 ; scarlet fever, 3 ; diphtheria, 10 ; enteric fever, 1 ; epidemic influenza, 1 ; diarrhœa, 2. The zymotic death rate was 1·21.

Vital Statistics for Mangotsfield.—

Population, 9,000.
,, 8,815 (census).

BIRTHS.—For 1902 the births were 270, of these 141 were males and 129 females. The birth rate was 30, slightly under the whole district ; 226 are left for the rest of the area, against 201 last year.

DEATHS.—The deaths from the Registrar's returns were 116, to which must be added 4 who died in Keynsham Workhouse. The total was 120, giving a rate 13·3, slightly under the rate for the whole district. The natural increase was 150, leaving 119 for the rest of the area.

INFANT MORTALITY.—Thirty-three deaths occurred under one year, which gives an infant mortality of 122·2 ; this is rather under the rate of the whole district. The premature births were 9.

ZYMOTIC DEATH RATE.—There were eight deaths from the principal zymotic diseases, *viz.* : scarlet fever, 1 ; diphtheria, 5 ; enteric fever, 1 ; diarrhœa, 1. The zymotic death rate was, therefore, ·8.

I beg to thank my fellow officers for their support and kindness during the year.

WM. MURRAY, M.D., &c.,
Medical Officer of Health.

To the Warmley Rural District Council.

GENTLEMEN,

I have the honour to submit to you the following report, showing the amount of work done in your district during the year 1902.

Nuisances abated	...	...	...	...	139
Total number of visits and re-visits, in order to secure completion of work	...	...	...	...	219
Dairies and Milk Shops inspected	...	...	...	...	85
Offensive deposits removed	...	...	...	...	71
Bakehouses inspected	...	...	...	...	15
Slaughter-houses inspected	...	...	...	...	14
Samples of water taken for the purpose of analysis	...	...	...	...	15
Gipsies' vans removed on account of nuisance	...	...	...	...	30
Company's water laid on to private houses	...	...	...	...	96
House drains entirely re-laid	...	...	...	...	7
„ partly „	...	...	...	...	15
Visits to premises on notification of infectious diseases	...	...	...	...	152
No. of houses inspected and reported upon in the Parish of Mangotsfield, with a view to connecting them with sewer	...	...	...	...	47
Cases of overcrowding remedied	...	...	...	...	4
Houses disinfected after infectious diseases	...	...	...	...	139
New Cesspits	...	...	...	...	7
Cesspits repaired	...	...	...	...	19
No. of Notices served to abate nuisance	...	...	...	...	40
Milk Shops and Dairies cleansed and whitewashed	...	...	...	...	70
Disused pits repaired	...	...	...	...	3
Factories and Workshops inspected	...	...	...	...	154
Notices served on occupiers and owners of workshops and factories to whitewash	...	...	...	...	33
New W.C.'s	...	...	...	...	6
W.C.'s cleansed and amended	...	...	...	...	17
Dilapidated tenements dealt with	...	...	...	...	5
Articles of bedding and clothing disinfected—too numerous to estimate.	...	...	...	...
Dangerous fences repaired	...	...	...	...	6
„ quarries fenced	...	...	...	...	4

C. R. CROSS, *Inspector of Nuisances.*

Factories, Workshops, and Workplaces.



Since my appointment on the 21st October, as Inspector of Factories, I have gone through the whole of the lists of out-workers sent to this Council by employers since the 1st August last, and have abstracted from the same the names and addresses of all persons receiving work from factories situated within this Council's area, but living outside your district, and these have been sent to the respective Councils in whose area these people live.

I have also inspected over a hundred workplaces, where work is being done at home, and, in the main, the general condition of the premises is satisfactory.

In a few cases, however, the places required to be white-washed, and I have served notice, in each case, for this to be done.

I have also issued a circular-letter to factory owners and persons employing out-workers, drawing their attention to that Section of the Act which requires them to send to this Council lists of the names and addresses of out-workers, which should be done on or before the 1st February.

C. R. CROSS,

Inspector of Factories and Workshops.

→ SURVEYOR'S → ANNUAL REPORT

For the year ending December 31st, 1902.

*To the Chairman and Members of the Warmley
Rural District Council.*

GENTLEMEN,

The development of the importance of your district is making steady progress.

The western portion of the Parish of Mangotsfield, where your district adjoins the City and County of Bristol, has considerably grown in population and value during the year, which is in some degree due to the fact that the Bristol Tramways and Carriage Company's electric trams enter your district at this point.

Generally speaking, the whole of your district is supplied with water from the mains of the West Gloucestershire Water Company.

The Parish of Mangotsfield is provided with a *good* system of sewers (about 14 miles in length) which has worked well and given no trouble, beyond an occasional flushing in the summer time, and your Surveyor is of opinion that flushing would be altogether unnecessary if the occupiers of the old houses would use a proper and sufficient supply of water in the cleansing of the water-closet pans. The condition will, however, improve in time, as all new houses are provided with a suitable flushing apparatus for the removal of the contents of W.C. pans, which, as buildings increase, will reduce the proportion of unflushed drains.

No serious complaints have been received as to the escape of sewer-air from your sewers, which is probably due to the uniform flow, the absence of stoppage, and the prevention of deposits in the sewers.

The Parishes of Bitton, Hanham, Oldland, and Siston, are served by cesspits at the rear of houses as a general means of disposal of sewage, but, in many instances, earth closets are being instituted in these more rural areas.

The chief centres in which new buildings have been erected are Stanley Park, Morley Road, Alexandra Gardens, Hill House Estate, Overnhill Estate, and Tee-Well Hill, in the Parish of Mangotsfield; Bridge Yate Road, in the Parish of Siston; Oldland Common and North Common, in the Parish of Bitton. Houses have also been erected in the Parishes of Hanham and Oldland, but not in large numbers.

Your Council have not had reason to disapprove any plans during the year on account of an attempt to erect too many buildings on a limited area, and the majority of the houses erected have a much larger area of land attached than the minimum required by the bye-laws.

The disposal of sewage in Mangotsfield has been accomplished without serious difficulties, and your Council have carried out important improvements in the works during the year, viz. : the construction of two liquefying tanks and two open filters, each 5' 6" deep, and a superficial area of 78 square yards. The filtering material is composed of gas work's clinkers, broken to pass a 3" ring, well washed before being placed in the beds.

The amount of sewage applied to these filters, after treatment in the liquefying tanks and before final treatment through the land, is estimated at the rate of 500 gallons per diem per superficial yard of filtering area, and I append hereto the results of chemical analysis made by C. J. Waterfall, Esq., F.C.S., F.I.C., of 4, Queen's Square, Bristol, of samples taken by himself in November last.

I have the honour to be, Gentlemen,

Your obedient servant,

HENRY M. BENNETT,

March, 1903.

Surveyor.

Table of Results of Chemical Analysis of Mangotsfield Sewage, at the various stages through the Disposal Works, made by C. J. Waterfall, Esq., F.C.S., F.I.C.

	Crude Sewage.	1st tank effluent.	2nd tank effluent.	Average of 1st and 2nd tank effluents.	Effluent from New Filter (fine).	Effluent from New Filter (coarse).	Land effluent.	Sample of small stream, into which land effluent passes before joining the river.
	Pts. per 100,000	Pts. per 100,000	Pts. per 100,000	Pts. per 100,000	Pts. per 100,000	Pts. per 100,000	Pts. per 100,000	Pts. per 100,000
Free Ammonia ...	16.80	9.920	8.80	9.36	2.600	2.04	0.44	2.30
Albuminoid Ammonia ...	0.820	0.65	0.58	0.615	0.406	0.120	0.14	0.110
Chlorine ...	15.19	10.86	9.94	10.40	9.94	9.94	5.21	10.35
Oxygen absorbed in 1 hour	—	—	—	—	—	—	0.40	—
" 4 hours	7.23	7.20	6.94	7.07	2.93	1.64	0.56	1.62
Total Solids ...	72.0	71.0	72.0	71.5	70.0	68.0	76.0	48.0
Solids in suspension...	24.0	3.0	2.0	2.5	0.98	3.0	0.99	very little
Nitrates ...	—	—	—	—	0.29	0.55	0.41	0.34
Odour ...	strong	strong	strong	—	unpleasant	not unpleasant	good	not unpleasant
Foaming ...	great	great	very great	—	excessive	not excessive	very little—	good
Colour ...	a good deal discoloured	discoloured	not much discoloured	—	not good	good	very slight discoloration or turbidity	good
Remarks ...	a fairly strong sewage	a strong tank effluent, solids in suspension good	a good and yet strong tank effluent, solids in suspension being low	—	this effluent shews poor nitration and purification, and the albuminoid figure is very high; not a good effluent	a good effluent but rather low in nitrates	this is a good effluent	a clear streamwater, causing no nuisance, though shewing a good deal of oxidized sewage matter

HENRY M. BENNETT, SURVEYOR.

TABLE I.

Vital Statistics of Whole District during **1902** and previous years.

YEAR	Population estimated to Middle of each Year	BIRTHS		TOTAL DEATHS REGISTERED IN THE DISTRICT						TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT	Deaths of Non-residents registered in Public Institutions in the District	Deaths of Residents registered in Public Institutions beyond the District	NET DEATHS AT ALL AGES BELONGING TO THE DISTRICT	
		Number	Rate*	Under 1 Year of Age		At all Ages								
				Number	Rate per 1,000 Births registered	Number	Rate*	Number	Rate*					
1	2	3	4	5	6	7	8	9	10	11	12	13		
1894	14277	469	32·85	77	164·17	223	15·61	Institution in the District.	No means	of knowing	223	15·61		
1895	14533	524	36·05	67	127·86	193	13·27				199	13·69		
1896	15200	510	33·55	55	107·84	212	13·88				211	13·88		
1897	15500	481	31·03	78	162·16	275	17·74				272	17·54		
1898	15700	491	31·27	67	136·45	237	15·09				246	15·67		
1899	15950	507	31·78	89	175·54	256	16·05				256	16·05		
1900	16200	449	27·71	56	122·49	211	13·02				214	13·21		
1901	16112	463	28·73	64	138·23	216	13·4	225	13·96					
Averages for years 1894-1901	15434	487	31·69	69	144	228	14·77	Public	1·5	5·	230·75	14·95		
1902	16510	496	30·04	64	129·03	215	13·22	No	...	12	227	13·74		

* Rates in Columns 4, 8, and 13 calculated per 1,000 of estimated population.

Area of District in acres (exclusive of area covered by water)—9,682 acres. Total population at all ages (at Census of 1901)—15,954. Institution outside the District receiving sick and infirm persons from the District—Keynsham Workhouse.

Inhabited houses, 3,625. Average per house, 4·4.

TABLE II.

Vital Statistics of separate Localities in **1902** and previous years.

YEAR	NAMES OF LOCALITIES							
	WHOLE DISTRICT				PARISH OF MANGOTSFIELD			
	Population esti- mated to middle of each Year	Births registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to middle of each Year	Births registered	Deaths at all Ages	Deaths under 1 year
1894	14277	469	32·85	77	...	...	...	...
1895	14533	524	36·05	67	...	...	...	...
1896	15200	510	33·55	55	...	...	...	...
1897	15500	481	31·03	78	...	...	...	...
1898	15700	491	31·27	67	...	...	...	...
1899	15950	507	31·78	89	...	...	...	...
1900	16200	449	27·71	56	...	...	...	...
1901	16112	463	28·73	64	8815	262	134	38
Averages of Years 1894-1901	15434	487	31·69	69	...	...	...	...
1902	16510	496	30·04	64	9000	270	*120	33

* 4 in Keynsham Workhouse.

TABLE III.

Cases of **Infectious Disease** notified during the Year **1902.**

NOTIFIABLE DISEASE	CASES NOTIFIED IN WHOLE DISTRICT							CASES NOTIFIED IN MANGOTS- FIELD PARISH	NO. OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY
	At all Ages	At Ages—Years							
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and up- wards		
Small-pox	NONE
Cholera ... ..	...	...	...	...	...	..	...	...
Diphtheria	21	...	7	8	2	4	...	12	
Membranous croup	1	...	...	1	...	..	...	...
Erysipelas... ..	19	...	...	2	4	12	1	5
Scarlet fever	96	2	26	58	7	3	...	65	
Typhus fever ... ..	..	...	...	...	...	...	...	...
Enteric fever	8	...	1	2	3	2	...	2	
Relapsing fever ... ..	...	...	...	...	...	...	...	..
Continued fever ... ..	...	...	...	...	...	...	...	...
Puerperal fever	2	...	...	...	1	1	...	1
Plague ... ..	...	...	...	...	...	...	...	...
Totals	147	2	34	71	17	22	1	85	

Isolation Hospital—Keynsham.

TABLE IV.Causes of, and Ages at, Death, during the Year **1902.**

CAUSES OF DEATH	DEATHS IN OR BELONGING TO WHOLE DISTRICT AT SUBJOINED AGES							DEATHS IN MANGOTSFIELD PARISH (AT ALL AGES)
	All ages	Under 1 year	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and up- wards	
Smallpox ... ..	...	...	...	...	...	...	...	...
Measles	3	1	2	...	...	...	...	...
Scarlet fever	3	...	2	1	...	...	...	1
Whooping-cough ... ..	...	...	...	...	...	...	...	...
Diphtheria and membranous croup }	10	...	9	1	...	...	...	5
Croup ... ..	...	...	...	...	...	...	...	...
Fever { Typhus ... ..	...	...	...	...	...	...	...	...
Enteric	1	...	...	...	...	1	...	1
Other con- tinued ... ..	...	...	...	...	...	...	...	...
Epidemic influenza	1	...	...	...	...	...	1	...
Cholera ... ..	...	...	...	...	...	...	...	...
Plague ... ..	...	...	...	...	...	...	...	...
Diarrhœa	2	2	...	...	...	...	...	1
Enteritis	10	9	1	...	...	...	...	5
Puerperal fever ... ..	...	...	...	...	...	...	...	...
Erysipelas ... ..	...	...	...	...	...	...	...	...
Other septic diseases }	...	...	...	...	...	...	...	...
Phthisis	16	...	...	...	2	14	...	10
Other tubercular diseases }	6	2	2	1	1	...	...	2
Cancer, malignant disease }	8	...	...	...	1	4	3	5
Bronchitis	27	10	2	...	...	4	11	12
Pneumonia	12	2	3	2	...	4	1	11
Pleurisy ... ..	...	...	...	...	...	...	...	...
Other diseases of respiratory organs }	...	...	...	...	...	...	...	...
Alcoholism ... ..	...	...	...	...	...	...	...	...
Cirrhosis of liver }	3	...	...	...	...	3	...	2
Venereal diseases ... ..	...	...	...	...	...	...	...	...
Premature birth	14	14	...	...	...	...	...	9
Diseases and acci- dents of parturition }	1	...	...	...	...	1	...	1
Heart diseases	34	1	1	2	2	14	14	20
Accidents	5	2	1	...	2	...	...	2
Suicides ... ..	...	...	...	...	...	...	...	...
All other causes	71	21	2	2	3	6	37	33
All causes	227	64	25	9	11	51	67	120

In recording the facts under the various headings of Tables I, II, III, and IV, attention has been given to the notes on the Tables.

13th January, 1903.

WM. MURRAY, *Medical Officer of Health.*

TABLE V.

**RAINFALL IN 1902, AT PUCKLECHURCH VICARAGE,
in the County of Gloucester.**

RAIN GAUGE—

Diameter of Funnel: 5 inches. Height of Top: above ground, 10 inches;
above sea level, 370 feet.

Month	Total Depth	Greatest fall in 24 Hours		No. of Days on which ·01 or more fell
		Depth	Date	
January ...	1·84	·51	28	11
February ...	1·30	·49	27	11
March ..	1·79	·44	15	16
April	1·45	·60	15	12
May	2·15	·35	21	20
June	3·80	1·05	13	17
July	·97	·31	25	8
August ...	3·96	1·	1	21
September ...	2·09	·41	11	11
October ...	1·94	·63	9	11
November ...	2·56	·49	8	16
December ...	2·70	·73	28	11
Total ..	26·55			165

(Signed) S. G. GILLUM.

TABLE VI.

URBAN POWERS

IN FORCE IN THE DISTRICT.

PUBLIC HEALTH ACT, 1875.

- Sec. 25—Whole district.
 26—(1) All except Hanham Abbots.
 44—Whole district.
 66—Mangotsfield only.
 112—Whole district.
 113— ,,
 114— ,,
 115— ,,
 155— ,,
 157— ,,
 158— ,, except Hanham Abbots.
 160— ,,
 161—(1) Mangotsfield only.
 169—Whole district (except part 1).
 170— ,,
 171—(As to fires) Mangotsfield only.
 3 Public Health Buildings in Street Act, 1888.
 23 ,, Acts Amendment Act, 1890—whole district.
 Part 2 ,, whole district.

TOWNS POLICE ACT, 1847.

Whole district.

- Sec. 28—Paragraphs as 13, 17, 18, 19, 24, and 30.
 29—
 32—
 33—

INFECTIOUS DISEASE NOTIFICATION
ACT, 1889.

